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ABSTRACT

This study investigated the relationship between locus of control orientation and adoption of cigarette smoking among ninth grade urban black Southern students. It sought to identify this relationship and determine if school-setting (junior or senior high school) or gender-related differences exist. The following information was used to assess student characteristics: (1) demographic questionnaire data; (2) self-report behavioral data regarding exposure to and experimental usage of cigarettes as well as current smoking patterns, and parental and peer use of cigarettes; and (3) measures of each student's Internal, Powerful Others, and Chance expectations of control, using Levenson's multidimensional inventory of locus of control. The analysis revealed a significant main effect for school setting: a higher proportion of senior high students than junior high students reported never having tried cigarettes; more junior high students than senior high students reported having tried cigarettes "once or twice." Internal classification was also found to be significantly related to the students' smoking status: students classified as High on the Internal scale were more likely to be "triers" or "smokers." No significant main effects were found for gender, Powerful Others, or Chance; there were no significant interaction effects. Discriminant analyses were conducted to identify students at risk for smoking. Three tables are included. (JS)

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DETERMINANTS OF SMOKING STATUS OF BLACK URBAN ADOLESCENTS

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ABSTRACT

The relationship between locus of control orientation and adoption of cigarette smoking among Black adolescents was investigated. A total of 321 9th grade students participated (215 junior high students and 106 senior high students). Information regarding experimentation with and current use of cigarettes was collected; measures of each student's Internal (I), Powerful Others (P) and Chance (C) expectations of control were obtained using Levenson's multidimensional inventory of locus of control. Analysis of variance was performed to assess the effect of school setting, gender, I, P and C classifications on students' smoking status. This analysis revealed a significant main effect for school setting: a higher proportion of senior high students (54%) than junior high students (41%) reported never having tried cigarettes; more junior high students (47%) than senior high students (34%) reported having tried cigarettes "once or twice". Internal classification was also found to be significantly related to the students' smoking status: students classified as High on the Internal scale were more likely to be "triers" or "smokers". No significant main effects for gender, Powerful Others or Chance were found; there were no significant interaction effects. Discriminant analyses were conducted to identify students at risk for smoking. Variables selected for inclusion into the discriminant equation were Internal score, Powerful Others score, school setting, smoking status of best friend, smoking status of father, and number of five closest friends that smoke. The equation derived accounted for 16% of the variance. The results obtained lend support for the continued development of at-risk profiles to identify those individuals most likely to become smokers.

INTRODUCTION

Prevention programs predicated upon the assumption that arming adolescents with refusal skills will deter the adoption of cigarette smoking have not proven to be maximally effective. Rather, current approaches to school-based prevention programs involve the enhancement of basic personal and social competence skills which appear to be related to substance use. A conceptual problem with this approach is that determinants of smoking are not fully understood. There is a need to further explore cognitive variables which mediate the adoption of the smoking habit, one of which is the construct of locus of control.

A limited number of studies have addressed the relationship between individuals' locus of control orientations and their adoption of health-threatening behaviors, specifically cigarette smoking. These studies have found that smokers were more external in their view of control whereas nonsmokers were consistently more internal. In addition, ethnic and social class differences in locus of control differences have been found. A number of studies have found Blacks to be more external in their orientation of control than Whites, and individuals from lower social class have been found to be more external. The aim of the present study was to investigate the relationship between locus of control orientation and cigarette use among an at-risk but largely underserved group -- urban Black southern adolescents. This study sought to identify this relationship and determine if school-setting or gender related differences exist.

METHODS

A total of 321 ninth grade students from a southern urban public school system participated in the study (215 students from one junior high school and 106 students from two senior high schools). The participating schools were matched on racial distribution (95% Black) and school smoking policies; the female to male ratio was 47:53. The assessment battery consisted of: (1) demographic questionnaire; (2) self-report behavioral data regarding exposure to and experimental usage of cigarettes as well as current smoking patterns, and parental and peer use of cigarettes; (3) Levenson's I, P and C Scales.

Based on their answers to six smoking-related questions, students were classified into one of four smoking categories:

(1) Nonsmoker -- has never smoked,
"not even a puff"
(2) Trier -- has smoked
"at least once but no longer"
(3) Experimenter -- smokes
"but not every week"
(4) Smoker -- smokes
"at least once a week"

RESULTS

Because of the small number of students reporting any consistent use of cigarettes, the categories" experimenter" and "smoker" were collapsed into one; due to inconsistent answers, 18 cases could not be classified. This classification scheme yielded the following distribution:

Nonsmokers	137	(45%)
Triers	130	(43%)
Experimenters/ smokers	36	(12%)

The locus of control instrument used yields three scores: Internal (I), Powerful Others (P), and Chance (C). Table 1 shows the means and standard deviations obtained for the sample as a whole, broken down by school setting and gender. Students were classified as either High or Low on each of the I, P and C scales based on a mean split.

Analysis of Variance (ANOVA) was conducted in order to assess the effects of school setting, gender, I, P and C classification on smoking status. This analysis revealed significant main effects of school setting ($p=0.043$) and Internal orientation ($p=0.038$); no significant differences were found in smoking status based on gender, Powerful Others or Chance orientation and no significant interaction effects were found. Table 2 shows the distribution of smoking status by school setting. A higher proportion of senior high school students were classified as "nonsmokers", whereas more junior high school students were classified as "triers". Table 3 shows the distribution of smoking status by internal classification (hi vs. low). A higher proportion of low internal students were classified as "nonsmokers" but more high internal students were classified as "triers".

Discriminant analyses were performed in order to derive an equation which would discriminate students into appropriate smoking category based on the following variables: I, P and C scores, school setting, gender, parental smoking status, smoking status of best friend and number of five closest friends that smoke. A stepwise variable selection method was used. Variables selected for inclusion were number of five closest friends that smoke, best friend's smoking behavior, school setting, Internal score, Powerful Others score, and father's smoking behavior (not included were Chance score and mother's smoking behavior). The equations derived from this analysis were found to correctly classify 55% of the cases: 64% of nonsmokers, 53% of triers and 29% of experimenters/smokers were correctly classified.

CONCLUSIONS

An unexpected finding from this study is that a greater proportion of students classified as High Internal were more likely to be "triers" and "experimenters/smokers" than Low Internal. This finding suggests that the adoption of cigarette smoking may involve an active decision-making component.

The equation derived through discriminant analyses accounted for 16% of the variance. Results support the need to incorporate findings from different theories of the etiology of substance use when developing risk-models for adolescents. Substance use is believed to be largely a socially learned behavior and familial and peer exposure have been established to be significant risk factors in the adoption of the smoking habit. In this study, paternal use of cigarettes as well as peer use were indeed found to significantly predict smoking status. Nonetheless, Internal and Powerful Others scores were found to contribute significantly towards the classification accuracy of the risk-equation. Results are encouraging and suggest the need to incorporate other cognitive variables which mediate the adoption of cigarette smoking. No simple risk models are likely to emerge, but models which incorporate findings from different perspectives are likely to prove to be the most accurate.

TABLE 1

MEANS AND STANDARD DEVIATIONS OF I, P AND C SCALES GENDER BY SCHOOL SETTING

	MALES		FEMALES		OVERALL	
	$\bar{X}$	s.d.	$\bar{X}$	s.d.	$\bar{X}$	s.d.
INTERNAL	13.0132	(7.59)	12.5059	(6.67)	12.7445	(7.11)
Junior High	11.5566	(6.22)	11.7339	(6.28)	11.6465	(6.237)
Senior High	16.444	(9.31)	13.8852	(7.17)	14.9717	(8.206)
EXTERNAL-POWERFUL OTHERS	26.520	(9.59)	26.5476	(9.28)	26.5346	(9.41)
Junior High	25.585	(9.12)	26.50	(8.65)	26.0467	(8.87)
Senior High	28.773	(10.41)	26.633	(10.399)	27.539	(10.41)
EXTERNAL-CHANCE	25.584	(9.22)	23.627	(10.297)	24.544	(9.84)
Junior High	25.171	(8.93)	25.202	(10.299)	25.187	(9.63)
Senior High	26.568	(9.90)	20.767	(9.74)	23.221	(10.18)

TABLE 2
SMOKING STATUS BY SCHOOL SETTING

Smoking Status	Junior High	Senior High	Total
Nonsmoker	41 %	54 %	45 %
Trier	47 %	34 %	43 %
Experimenter/ smoker	11 %	13 %	12 %

TABLE 3
SMOKING STATUS BY INTERNAL CLASSIFICATION

Smoking Status	Low	High	Total
Nonsmoker	50 %	40 %	45 %
Trier	41 %	46 %	43 %
Experimenter/ smoker	9 %	14 %	12 %